



Attorney Docket No.: 0492611-0545/MIT9277 CONII

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Seleznev, *et al*

Examiner: Cooke

Serial No.: 10/799,388

Art Unit: 1754

Filing Date: March 12, 2004

Title: VACUUM PROCESSING FOR FABRICATION OF SUPERCONDUCTING THIN FILMS FABRICATED BY METAL-ORGANIC PROCESSING

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION UNDER 37 C.F.R. 1.131**

I, Michael J. Cima, Ph.D., declare as follows:

1. I am an inventor of the subject matter disclosed and claimed in United States Patent Application Serial No. 10/799,388 ("the '388 application"), filed March 12, 2004, and entitled "Vacuum Processing For Fabrication Of Superconducting Thin Films Fabricated By Metal-Organic Processing". This application claims priority to U.S. Patent Application No. 10/194,561, filed July 13, 2002, and to United States provisional patent application Serial No. 60/305,407, filed on July 13, 2001.

2. This Declaration is presented for the purpose of removing from consideration by the Examiner a paper by Solovyov, *et al.*, entitled "*Ex-situ* Post-deposition Processing for Large Area  $Y_1Ba_2Cu_3O_7$  Films and Coated Tapes", IEEE Transactions on Applied Superconductivity, 11(1) 2939-2942 (2001) (hereinafter, "Solovyov"). The paper first became available to the public on April 24, 2001. The present Declaration is presented in accordance with *In re Stompel*, 113 U.S.P.Q. 77 (CCPA 1957) and establishes conception and reduction to practice of the invention in this country before April 24, 2001.

3. While Solovyov bears notations indicating that it was published in March, 2001, I understand, as a result of reviewing the Declaration under 37 C.F.R. § 1.132 of Valarie Rosen, that Solovyov was first published on April 24, 2001.

4. The inventors of the claimed subject matter of the '388 application are Igor Seleznev and Michael J. Cima.

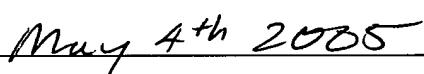
5. On a date before April 24, 2001, Igor Seleznev and I conceived and reduced to practice our invention of a method for vacuum processing for fabrication of superconducting thin films fabricated by metal-organic processing.

6. Exhibit 1 is a copy of pages 68-69 from the laboratory notebook of Igor Seleznev, with dates blacked out. Exhibit 1 provides evidence of conception and actual reduction to practice of the claimed invention prior to April 24, 2001. In particular, page 68 includes a description of the conversion of a metal oxyfluoride film in a processing gas having a total pressure less than atmospheric pressure. Page 68 has four photomicrographs of a sample prepared using the techniques of the invention. Four copies are included to show each of the photomicrographs. Page 69 is an x-ray diffraction spectrum showing the presence of an oxide superconductor in a sample prepared using the techniques described on page 68. The notes were prepared in the United States of America. The originals of these two pages bear dates prior to April 24, 2001.

7. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patents issued thereon.



Michael J. Cima, Ph.D.



Date

MAY 18 2005

Exhibit 1

Date 5/5

Student's Name

Subject

Instructor's Name

Pictures of the sample  
prepared in vacuum at 80 torrs.

Water was introduced after 10  
minutes ~~away~~ of heating segment  
at controller at approx 40°C  
in the furnace



750X vacuum #1 NG 1122x#2

sample was made at 725°C, 80 torrs  
some pressure, with approx 1% O<sub>2</sub>

18-25 minutes at 40°C

Student's Name

Date

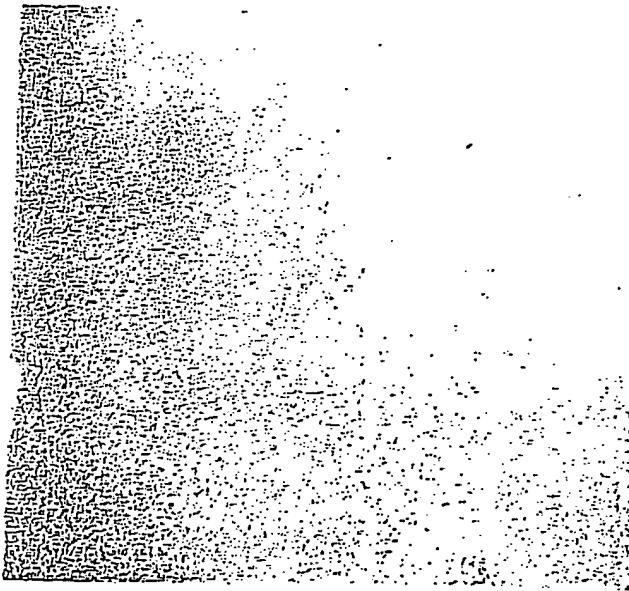
Subject

Instructor's Name

Pictures of the sample  
prepared in vacuum at 80 torr.

Water was introduced after 10  
minutes ~~end~~ of heating segment  
at controller at approx 40°C  
in the furnace.

15CX MG 11229 #2  
uncle #1  
15CX MG 11229 #2



750x vacuum #1 MG 11229 #2

Sample was made at 72.5°C, 80 torr  
total pressure, 1000 ppm ~~end~~ of O<sub>2</sub>

18-25 minutes at ~~2~~

Student's Name

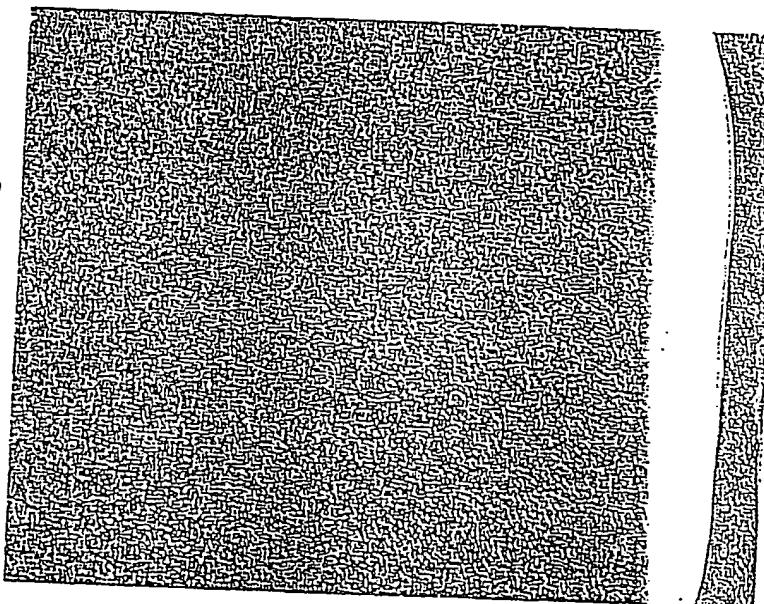
Date 6/8/68

Subject

Instructor's Name

Pictures of the sample  
prepared in Vacuum at 80 torr.

Water was introduced after 10  
minutes ~~end~~ of heating segment  
at controller at approx 40°C  
in the oven.



750x vacuum ± 1 NG 1229±2.

Sample was made at 725°C, 80 torr  
total pressure, 1000 ppm ~~water~~ of  $\text{CO}_2$ .

18-25 minutes at  $\frac{1}{2}$

Student's Name

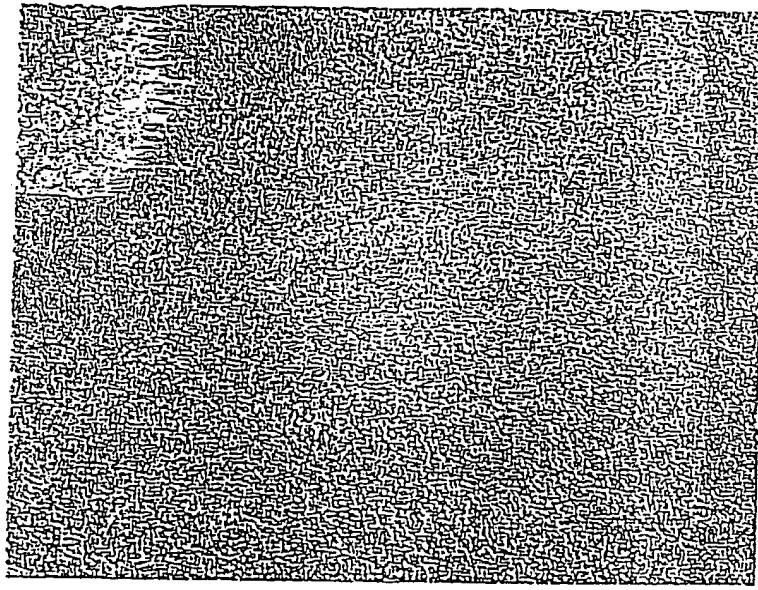
Date 6/8

Subject

Instructor's Name

Pictures of the sample  
prepared in vacuum at 80°c.

Water was introduced after 10  
minutes ~~time~~ of heating segment  
at controller at approx 40°c  
in the furnace.



750x vacuum  $\pm$  1 MG 122a #2

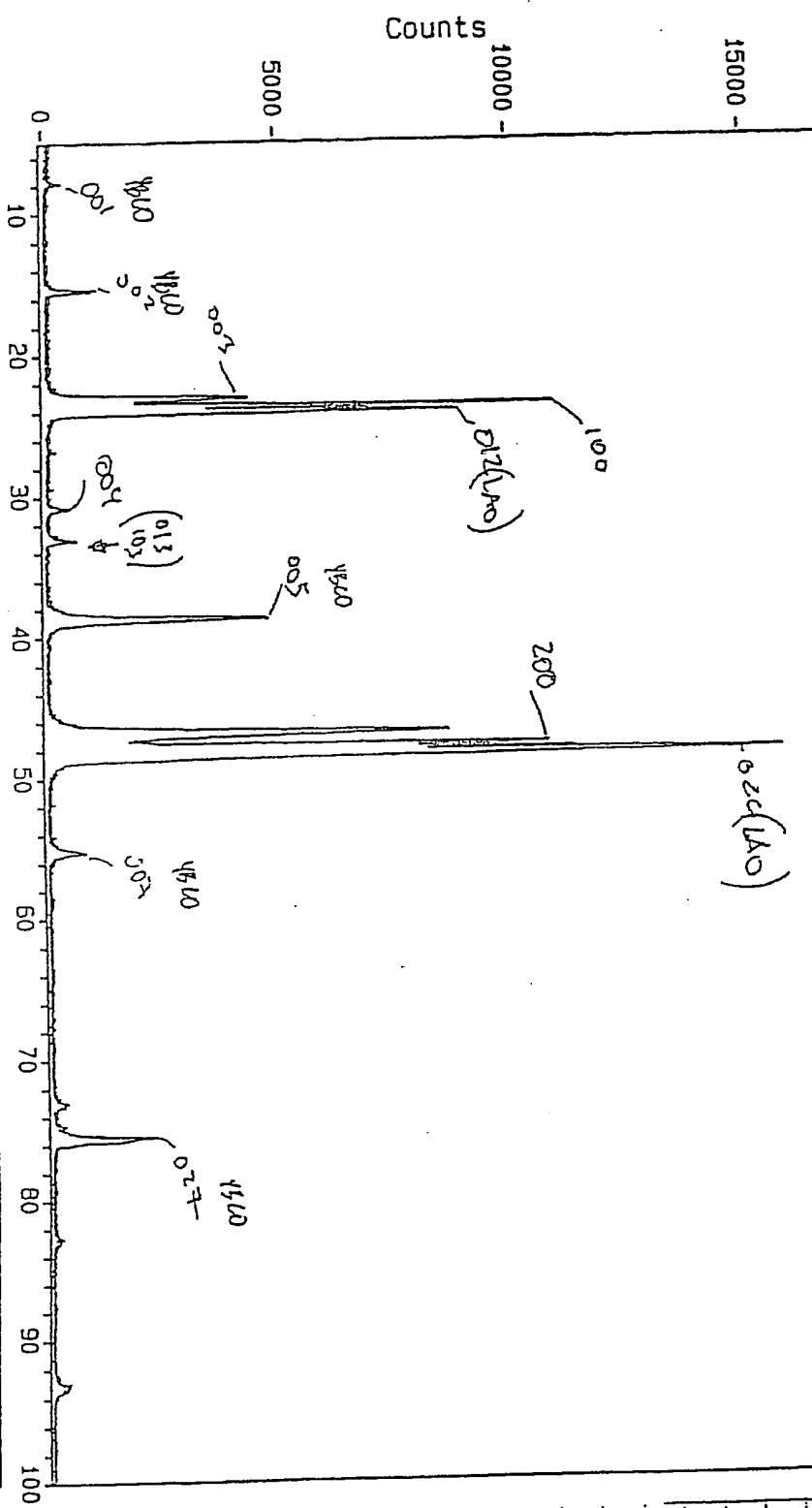
Sample was made at 725°C 80°c  
some pressure, 100ppm  $\pm$  1% of O<sub>2</sub>

18-25 minutes at  $\pm$

Student's Name

R\DATA

ID: L020700#4 VACUUM\_3 50\_MINUTES, 09:51  
File: Z05523.RAW Scan: 5-100/.02/ 1/#4751, Anode: CU



1> 39-0406: Ba2Cu3O6.8 - Barium Copper Yttrium Oxide

2> 31-0022: LaAlO3 - Aluminum Lanthanum Oxide